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Private Water, Public Good: Water Privatization and State Capacity in Chile

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Abstract In the global policy debate over whether water services in developing countries should remain public or be privatized, advocates for privatization call for reducing the role of the state in water services, while civil society groups argue that privatization violates the human right to water. This article examines water privatization in Chile, a crucial case in the debate over the role of markets and states in water services. Chile is known as a water privatization success story due to its high coverage of drinking water and sanitation under a fully privatized system. The article addresses two questions: How effectively does Chile meet the standard for fulfilling the human right to water within the privatized system? To what extent has privatization in Chile reduced the role of the state in water service provision? I find that the human right to water, narrowly defined, is fulfilled in Chile; however, this outcome is not attributable to the merits of privatization. Chile's strong state capacity to govern the water sector in the public interest by embedding reforms in state interventions explains the relative success of the Chilean water sector. These findings support the argument that a strong state role is necessary to fulfill the human right to water, even in a privatized water sector.

Keywords Chile · Privatization · Water policy · State capacity · Human rights

The privatization of water and sanitation services, a policy once touted as the solution to inefficient state-run water utilities in the developing world, is one of the more unpopular policies of the neoliberal development paradigm. Rate hikes, poor water quality, cut offs to poor customers, and lack of transparency plagued numerous contracts in Latin America, Africa, and Asia, and lead to the premature cancellation of contracts amidst protests in cities in Argentina and Bolivia. Several countries including the Netherlands, Uruguay, Bolivia, and South Africa have amended their constitutions to establish a human right to water, and in some cases, to ban the privatization of water utilities. Campaigns for the human right to water oppose

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privatization as antithetical to a human rights approach to water services in part because privatization reduces the role of the state, which is the primary responsible party for fulfilling human rights. While a strong state role is required in public water utilities, the state's role is less clearly defined in water sectors that incorporate private sector participation.

This article examines water privatization in Chile, a crucial case in the debate over the role of markets and states in water services. Chile is considered to be a water privatization success story because it has near universal coverage of safe drinking water and sanitation in urban areas under a fully private system. This article addresses two questions: How effectively does Chile meet the standard for fulfilling the human right to water within the privatized system? And second, to what extent has privatization in Chile reduced the role of the state in the water and sanitation sector?

This analysis shows that while Chile's privatized water system does not fulfill the broader standard of the human right to water due to lack of avenues for citizen participation, it does meet the narrow standard of access, quality, and affordability. However, this relative success is not attributable to the merits of privatization. In Chile, where close to 100 % of citizens receive their water from private companies, the state plays a strong role in managing the water and sanitation sector. Chile's successful water sector is the result of the creation of an efficient public water sector prior to privatization and of the state's capacity to govern the sector to mitigate the negative effects of privatization. Rather than a neoliberal success story of reducing the role of the state, the Chilean water service sector can better serve as a model for building a strong public water sector and for embedding reforms in state interventions to protect the public interest.

Literature on privatization experiences in Latin America points to several areas where state capacity is important, citing weak state performance as an incentive for reforms (Manzetti 2000; Teichman 2001) and attributing privatization failures to poor regulation and public oversight (Birch and Haar 2000; Manzetti 1999). This article takes a broader view of state capacity to include other areas of state intervention beyond regulation, such as investment and subsidy systems for poor households. I also take a different approach to analyzing the outcomes of privatization by evaluating the Chilean water and sanitation sector using a human rights standard. Existing research on the impact of privatization does not specifically address human rights outcomes, although several studies find that privatization poses a problem for equitable access to the poor, particularly in monopoly sectors (Birch and Haar 2000; Manzetti 1999; Teichman 2001; Ramamurti 1996) and in social services sectors such as health and education (Kaufman and Nelson 2004). Although these studies do not analyze privatization of water utilities, their conclusions speak to the potential negative effects of privatization in similar utilities in the region.

Chile presents an interesting case within the context of this research. The case of water privatization in Chile provides a rare example of full privatization in a monopoly service sector that has achieved near universal access in urban areas. Chile is viewed as a model for neoliberal reforms in the region (Silva 1996), and specifically, for water sector reform (Bauer 2004). Chile's strong commitment to free market economic policies and the low state role in other privatized sectors (Murillo 2002) make it an unlikely case of strong state interventions. I argue that Chile maintained strong state capacity to govern the water sector in the public interest by implementing a form of

"embedded neoliberalism" (Kurtz and Brooks 2008), which combined reforms with targeted state interventions. This approach explains the relative success of the Chilean water sector and the fulfillment of the minimum criteria for the human right to water.

In evaluating the Chilean water sector, I distinguish between a narrow and broad definition of the human right to water. Based on United Nations General Comment Number 15, "The Right to Water,"[1] the human right to water can be narrowly defined according to three key components: access, safety, and affordability of water and sanitation services. Access is measured by connection rates for drinking water and sanitation in the home, safety is evaluated using the "Guidelines for Drinking Water Quality" distributed by the World Health Organization, and affordability refers to both the price per cubic meter of water and the average water bill as compared to the average monthly income. The broader definition of the human right to water includes social movement demands for citizen participation in water management decisions. To analyze the role of the state in the Chilean water sector, I trace the process of water reforms in Chile from the 1970s to present drawing from archival research and in-depth interviews with Chilean water policymakers, government officials, water utility workers, and water policy analysts.[2]

The article is organized in the following way: The "Privatization, States, and the Human Right to Water" section provides an overview of the global water policy debate and relevant literature. "The Human Right to Water in Chile" section presents the Chile case and evaluates the Chilean water sector from a human rights perspective. The "History of Reforms to the Chilean Water Sector" section traces the process of water privatization in Chile from the 1970s to present.

Privatization, States, and the Human Right to Water

Inadequate access to water and sanitation is part of the cycle of poverty and underdevelopment that affects the majority of the developing world. Water-related diseases kill more people than all forms of violence combined including war, with between 14,000 and 30,000 people dying daily from consuming dirty water (Gleick 2000: 1). Whereas some regions naturally lack sufficient freshwater supplies, Latin America has abundant rainfall and freshwater sources. Nonetheless, over 77 million people lack access to clean water in the region. In most of Latin America, lack of access to clean water is a problem of poor governance, not a problem of water scarcity.

Developing countries have struggled to build, maintain, and improve water and sanitation services due to the high cost involved, the lack of available investment, and the constant need for infrastructure maintenance and expansion. Water and sanitation infrastructure is crumbling from old age and lack of maintenance, with some systems losing up to 30–40 % of their water through pipe leakage. Because the water sector is a natural monopoly and is linked to public health, governments have historically owned

[1] General Comment 15 was issued in 2002 by the UN Committee on Economic, Social and Cultural Rights. It is a legally nonbinding document that recognizes the human right to water and offers clarification on state obligations to fulfill this right.

[2] This article focuses on policy reforms in the capital city of Santiago. A focus on urban water supply is called for because the majority of private sector participation in water services takes place in cities, and privatization was proposed specifically to solve urban water problems (Bakker 2010: 3–4).

and managed this sector in the public interest. As populations grow and infrastructure ages, public water companies in the developing world are straining to address the growing gap in access to water and sanitation services, particularly for the poor.

To address this perceived failure of public water services, international lending institutions began pushing for a market approach to managing public water utilities beginning in the 1980s and 1990s. The World Bank, in particular, promoted the application of market principles to the water sector, including privatizing water utilities, as the solution to inefficient, cash-poor state-run water and sanitation services (World Bank 1993, 2004). The market approach calls for treating water as a private, economic good and introducing private sector participation into previously public water sectors through concessions between governments and private water operators (Gleick 2002). Advocates for the market approach argue that water should be treated as a fully private and tradable commodity, and that the economic value of water is equal to its market price.

The term "water privatization" describes a variety of models of private sector involvement in water services.[3] These range from the smallest scale, such as contracting services like installing or reading meters, to full divesture where the entire water business and infrastructure is transferred from the government to a private company through sales of shares in the company, usually in perpetuity. The term "private sector participation" is a broader term that describes any contract or agreement between a public agency and a non-public institution, such as a multinational private company. Most water contracts, such as concessions and leases, fall into the category of private sector participation but do not necessarily qualify as full privatization.[4]

World Bank water experts predicted that private operators would bring the necessary investment and technical expertise to correct the inefficiencies wrought by decades of state-run monopolies in the water sector. The World Bank began to refute the idea (previously held by the World Bank itself) that infrastructure goods are public goods and that the state is the appropriate provider of these goods. Calls for privatization were incorporated into their lending packages in the early 1990s, and private sector participation in the water sector peaked worldwide in 1997 (Public-Private Infrastructure Advisory Facility [PPIAF] 2007). This policy was part of the neoliberal package aimed at liberalizing economies by, among other things, reducing the role of the state in the economy through privatization.

At this time, many public water companies in Latin America were bowing under the weight of corruption, inefficiency, and a lack of funding for public services, which had been drying up since the 1980s. As a result, Latin America became the testing ground for this new approach to water services, as several governments in the region agreed to sell shares in public water utilities to private water companies.

Although the majority of water utilities in the world are still public, water privatization has substantially increased the number of people served by private operators in the last two decades. Since the 1990s, there has been an 800 % increase in water users

[3] It is important to distinguish between privatization of water *resources* (which refers to the ownership, use, management and/or regulation of bodies of water, such as lakes, rivers and underground aquifers) versus privatization of water *services* (which refers to ownership and/or management of the infrastructure and entities that deliver water and sanitation services to consumers), which are the subject of this article.

[4] The term privatization is appropriate to describe the case of Chile because the Chilean water sector was sold through divesture.

in Africa, Asia, and Latin America purchasing water from European-owned water firms (Goldman 2007: 788). Several water multinational companies dominate this shift in ownership of water utilities. The French companies Suez and Vivendi (now Veolia) control approximately 70 % of the private water markets (Goldman 2007: 790).

Water privatization proved to be an unpopular policy in much of the developing world when it failed to deliver on promises of improved water access. The French water company Suez has been steadily withdrawing from its contracts in Latin America, including the premature cancellation of contracts amid protests in Argentina and Bolivia. Local protests in Latin America sparked a global campaign aimed at banning the sale of water utilities to private companies and for including water in the list of internationally protected human rights. This global campaign achieved a major victory in July 2010 when the United Nations General Assembly adopted a resolution recognizing the human right to water and sanitation as human rights that are essential for the enjoyment of life and all other human rights.

The campaign to recognize the human right to water emerged in direct response to the shift toward privatization of water services in the 1990s. The "water justice movement," a global network of civil society organizations, argues that water is a fundamental human right and a resource that is too scarce and precious to be privately owned and managed. This global movement claims that privatization negatively affects access, quality, and affordability of water, and that privatized water utilities are undemocratic and less accountable than public utilities. The campaigns call for legalizing the human right to water in national legislation and constitutions, banning privatization of water companies, and increasing citizen participation in decision-making about water issues.

Campaigns for the human right to water are rooted in the broader critique that neoliberal policies like privatization pose a threat to human rights in developing countries by reducing the role of the state, specifically by restricting economic policy choices available to governments (Nelson and Dorsey 2008). Research on the human rights implications of neoliberal reforms provides empirical support for this critique. Privatization of state-owned enterprises has been found to negatively affect the fulfillment of social and economic human rights by exacerbating economic inequality (Vreeland 2003; Abouharb and Cingranelli 2006, 2007; Franklin 1997; Keith and Poe 2000; Felice 2003; Branco 2009) and restricting governments' economic policy choices (McCorquodale and Fairbrother 1999). Furthermore, states are the responsible party for fulfilling socioeconomic human rights either through direct provision of services or by creating the legal, institutional, and political environment through which rights can be fulfilled (Donnelly 2002; Felice 2003; Haglund and Aggarwal 2011; Hertel and Minkler 2007). Evaluating the fulfillment of the human right to water in Chile requires analyzing the ability of the state to implement policies in the water sector, and an analysis of how state capacity has changed with privatization.

As countries became more integrated economically in the 1980s and 1990s, concerns arose that the growing power of transnational actors was undermining the power of states as economic actors in domestic affairs (Evans 1997; Strange 1996; Cable 1995; Schmidt 1995; Van Creveld 1999; Feigenbaum et al. 1998). Studies on the "retreat" (Strange 1996) or the "eclipse" (Evans 1997) of the state revealed the ways in which public authority was challenged by private power both domestically in the form of civil society and globally in the form of markets and international actors. Weak state

capacity to implement policy, a problem associated with developing country governments (Migdal 1988), was exacerbated in some cases by economic liberalization. Privatization of state-owned enterprises specifically has weakened state capacity to guide development and intervene on behalf of marginalized groups in some cases (Ramírez 2000).

One strand of the literature on privatization argues that while privatization narrows the scope of the state's role, state power is not necessarily reduced by privatization. States have an important role to play in the enforcement of property rights, the management of revenue collecting mechanisms and other tasks associated with privatization (Feigenbaum, Henig, and Hamnett 1998; Schamis 2002). Schamis (2002) argues that privatization can even be accompanied by a strengthening of state capacity as states construct new institutional frameworks to make markets work. Indeed, transnational actors may actually "need competent, capable states more than their own [neoliberal] ideology admits" (Evans 1997: 73).

While recognizing that privatization poses a threat to the state's ability to fulfill human rights, the findings of this article support the notion that some states can maintain a role in economic policy implementation even when carrying out market reforms. Although there was strong policy convergence around privatization in Latin America during the 1980s and 1990s, not all states implemented reforms in the same way (Murillo 2002). Just as some states maintain the necessary autonomy to set their own policy goals within the industrial arena (Evans 1995), states can also retain autonomy to implement policies in the social services sector. Despite the pressures to reduce the role of the state in the economy through neoliberal reforms, some developing countries are able to maintain the ability to effectively intervene in their own economies (Kurtz and Brooks 2008). Kurtz and Brooks argue that rather than reducing the state role and ceding control to private actors, these countries "retain important leeway and motive to embed neoliberal economic reform in state interventions" (Kurtz and Brooks 2008: 232).

Embedded neoliberalism is a form of state-mediated integration with the international market; it is a middle ground between the protectionist statist approach of past development models and the orthodox neoliberal model of the 1990s. The state can be a promoter of economic production through targeted interventions such as export promotion and public employment while keeping a liberalized trade and finance sector (Kurtz and Brooks 2008: 233). In the case of privatization, embedded neoliberalism calls for retaining a state presence in certain sectors such as utilities, infrastructure, banking, and energy.[5] This embedded approach to the implementation of water privatization offers an explanation for how the human right to water, narrowly defined, is fulfilled in Chile under a fully private system. This strong state role is surprising given that Chile is known as a model neoliberal reformer within Latin America, in part due to early and broad implementation of privatization.

The literature on privatization in Latin America addresses the state role in several ways. Weak state capacity is cited as both an incentive for privatization and as an explanatory factor for privatization failures. In the period leading up to the early 1990s, privatization was proposed as a solution to address state failures in providing effective

[5] Although Kurtz and Brooks do not apply their theory to the water services sector, they find that the Chilean state has embedded other neoliberal reforms in state interventions.

and efficient services in Latin America (Manzetti 2000; Teichman 2001; Tunc 2005; Doyle 2010). Privatization was undertaken to address fiscal deficits, lack of capital, and bankrupt state-owned enterprises (Manzetti 2000; Teichman 2001). Case study research on privatization of public enterprises, such as Brooks' treatment of cash-strapped pension systems (Brooks 2007) and Kaufman and Nelson's work on failing public health and education sectors (Kaufman and Nelson 2004), demonstrates how weak state performance in public services provided an incentive and justification for privatization. As this article will show, this was not the case in Chile where the public water sector was efficient and provided high quality service prior to privatization.

Empirical research on the impact of privatization also addresses state capacity by pointing to the importance of post-privatization regulation, particularly in monopoly sectors. Monopoly sectors are prone to failure following privatization due to lack of competition, regulatory oversight, and public accountability (Birch and Haar 2000: 222–226; Manzetti 1999; Teichman 2001). Ramamurti (1996) argues that post-privatization regulation is crucial in monopolistic sectors such as telecommunications, airlines, and roads. Manzetti (1999) finds that in the Argentina case, weak regulatory structures prior to privatization translated to ineffective regulation of the newly privatized sectors.[6] Although these case studies focus on utilities other than water, the role of regulation in monopoly sectors is applicable to the water and sanitation sector, which is a natural monopoly. I treat regulation as one aspect of state capacity, which also includes government guidance and investment in the public system prior to privatization as well as the establishment of a subsidy system for low-income households.

I evaluate privatization outcomes in Chile's water services sector using a human rights standard. Previous studies on privatization outcomes in Latin America do not use human rights as a standard for evaluation, although some pay particular attention to the impact of privatization on the poor. Protecting access to quality services for the poor has been a challenge in privatized social service sectors other than water, such as health and education (Kaufman and Nelson 2004). However, one study by the Inter-American Development Bank evaluating the "welfare impact" of privatization in Latin America finds that when properly regulated, privatization can benefit the poor through expanded and improved services (Chong 2008). I take a broader view by evaluating not only measures of access, quality, and affordability of water services, but also the degree of citizen participation in decision-making, which is a key component of the human right to water.

Although Chile is a poster child for privatization, the Chilean water sector does not fit the typical pattern of privatization described in the literature, making Chile somewhat of an outlier within the region. Privatization in Chile was driven less by the need to reform cash-strapped public companies as described above, and more by the ideology of the US-trained "Chicago Boys" under the military dictatorship of General Augusto Pinochet from 1973–1990 (Birch and Haar 2000; Murillo 2002). As this article will show, failing public water services did not drive water privatization in Chile. The public water sector in Chile achieved close to 100 % coverage and efficient operation under public management. In terms of outcomes, Chile has near universal

[6] Manzetti finds that weak post-privatization regulation was also a problem in Brazil and Peru (Manzetti 1999).

water and sanitation coverage in urban areas. While water privatization contracts were overturned after protests in Bolivia and Argentina, the policy was implemented without major protest in Chile. The private water services sector in Chile is considered to be a rare case of success in terms of coverage and efficiency outcomes within the region, making it an important case to understand.

The case of water privatization in Chile is also unique within the context of research on other experiences with privatization in Chile. Most of the research on privatization in Chile focuses on the Pinochet era and the wave of reforms that took place in the 1980s. The Pinochet regime privatized dozens of state-owned enterprises including airlines, steel, and many public utilities (Schamis 2002; Birch and Haar 2000; Teichman 2001; Murillo 2002; Hachette and Lüders Schwarzenberg 1993; Glade and Corona 1996). Schamis (2002) describes how Pinochet sought to roll back state interventions in the economy through privatization. During this time, policy makers and the private sector acted in collusion to make policy that was not in the public interest (Schamis 2002). Murillo describes Pinochet's privatization agenda as rooted in a vision of the economy that was based on a pro-free market, anti-statist model that called for low levels of state intervention (Murillo 2002: 476–7). This minimal state role is evidenced by the lack of independent, industry-specific regulatory agencies for telecommunications or electricity sectors (Murillo 2002: 482). These studies characterize Chile during the Pinochet years as a time of state retrenchment in social services.

The water and sanitation sector was one of the few state-run services not privatized under Pinochet. Water utility privatization began in 1999 under the democratically elected Concertación government. The Concertación governments continued the implementation of neoliberal reforms in Chile (Bresnahan 2003), including placing strict limits on state interventions in the economy and pursuing private ownership of public utilities (Schamis 2002: 83). Critical assessments of the Concertación years cite worsening income inequality (Agacino 2003), ongoing cuts to social services (Cademartori 2003), and a reduction of the government's role in providing social welfare and regulating the economy (Olavarría 2003).[7] These studies suggest that the political agenda of maintaining a minimal state role in the economy survived following the end of Pinochet's regime.

Given Chile's continued commitment to neoliberal orthodoxy following the return to democracy, the low state role in other utility sectors, and the Chilean's government's divesture from the water sector, we would expect a minimal state role in the Chilean water sector. This is not the case. I show that the Chilean state played a strong role prior to and since privatizing water services. By embedding neoliberal reforms in state interventions, the Chilean state maintained a strong capacity to regulate and govern the water services sector. While my findings confirm some elements of the research on the importance of regulation in monopoly sectors, this case points to a series of additional important state interventions, and it challenges the conventional wisdom on Chile as a neoliberal poster child by showing the strong role of the state.

The Chile case is an example of how some states manage globalization, acting more as "midwives" rather than victims of globalization processes (Weiss 1998: 198). In her work on the capacity of states in East Asia and Europe to guide industrial change,

[7] However, Kurtz finds that Concertación governments provided some highly targeted public assistance in an attempt to ameliorate poverty (Kurtz 2004).

Linda Weiss argues that states are adapting, not necessarily declining, as they become economically integrated through globalization. Those who argue that state power is declining overstate the power of states prior to globalization, assume that all states respond the same way, and construct a sense of helplessness of states in the face of global pressures (Weiss 1998). In the Chile case, state capacity remained strong even after it divested from the water sector.

The term "state capacity" can refer to several different aspects of state power, such as Weber's conception of state capacity as the legitimate use of force, or the state's administrative ability to collect taxes. I focus on a particular aspect of state capacity: the state's ability to make and implement policies effectively through state institutions (Waisman 1999). This approach draws on a conception of state power as the institutional capacity of a state to exercise control and implement policy choices within the territory it claims to govern (Mann 2008: 355). Mann's concept of infrastructural power refers to the state's ability to provide security and infrastructure, including public goods. These basic functions of the state are necessary for development and economic growth, but are not captured in studies that look at other aspects of state capacity such as state autonomy or state bureaucracy. I explore the capacity of the Chilean state to embed neoliberal reforms to the water services sector in state interventions, and what this means for the outcomes of the policies in terms of human rights standards.

The Human Right to Water in Chile

Chile is well known within development circles for implementing the most extreme free market approach to water resource management and water services in the world (Galaz 2002; Bauer 2004; Briscoe et al. 1998; Budds and McGranahan 2003). The UK and Chile are the only countries with fully privatized water sectors.

Chile is considered a model of market-based water management for three main reasons. First, Chile's Water Code of 1981 is the most free market-oriented water code in the world (Bauer 2004). The Water Code establishes private property rights to water resources in an "unconditional and unregulated" manner (Bauer 2004: 1). It sets the parameters for managing water as an economic resource and treating water as a fully marketable commodity. Other countries, including Bolivia, Australia, Indonesia, South Africa, Spain, Taiwan, and Vietnam, have studied the Chilean model as part of their own water policy reform (Bauer 2004: 26). Some countries, including Bolivia, were pressured by international lenders such as the World Bank and the Inter-American Development Bank to follow the Chilean model in reforming their water rights legislation (Bauer 2004: 26; Budds and McGranahan 2003). The Water Code guides management and regulation of water *resources* (bodies of water such as lakes, rivers and underground aquifers) not water *services* (the utilities and infrastructure that deliver water and sanitation services to consumers); therefore, it is not directly related to the privatization of the companies that provide those services. However, the Water Code is indicative of the neoliberal nature of the policies that were carried out in Chile at this time and the Pinochet government's approach to water management. Although regulation of water resources is weak in Chile (Bauer 2004), this article will show that strong regulation of water services exists despite the commitment to market-based approaches to water resource management.

Second, Chile was the first country in Latin America to "modernize" its water sector through legislative reforms beginning in 1988 (Foster 2005). These reforms succeeded in improving the efficiency of Chile's public water services. While it was not the first country in the region to privatize the water and sanitation sector, the method of privatization, divesture, was the most extreme. Third, the privatization of Chile's water and sanitation companies is viewed as a success based on the nearly 100 % coverage rates for drinking water and sanitation in urban areas such as Santiago, and the consistently improving treatment of wastewater since the introduction of private sector participation.

Chile's water services sector meets the minimum criteria for fulfilling the narrow definition of the human right to water.[8] The national coverage rate for drinking water is 99.8 % and 95.2 % for sanitation in Chile (SISS 2007). Coverage in the Santiago metropolitan area is 100 % for drinking water and 98.5 % for sanitation (SISS 2007: 61). An additional measure of access is the continuity of service, as a house connection is not considered as full access if water does not flow from the tap. Continuity of service in Santiago is 100 %, with limited interruptions of service and prompt resolution of complaints and problems (SISS 2007).

Beginning with its 2007 report, the government regulator for water services, the SISS (Superintendent of Sanitation Services), analyzed the water quality using a new national norm based on the Guidelines for Drinking Water Quality distributed by the World Health Organization. National compliance is 98–99 % with all quality norms except bacterial levels, which is 97 % (SISS 2007: 15). As an indicator of water quality, infant mortality for Chile is 7.2 (deaths/1,000 live births), which is closer to the mortality rate of the USA and European countries than it is to the mortality rate of Chile's neighbors.

Chile's water services are expensive, but prices fall within the accepted range of affordability. In December 2007, the tariff for the first 20 m^3 of drinking water per month was 11,199 Chilean pesos (US $19.83), up 10.7 % from the previous year (SISS 2007). As Fig. 1 shows, the average water bill in the Greater Santiago area has risen since privatization.

According to the Chilean National Statistic Institute, the average monthly income for a household in Greater Santiago is 713,926 Chilean pesos[9] (US $1,264.64). The average water bill for a Santiago household accounts for approximately 1.56 % of monthly household income. Standards of affordability vary from country to country; spending over 3 % of monthly household income on water services is considered a hardship by UK standards, while the US national affordability rate set by the USDA is 1.5 % of median household income per month.

Residents of Santiago pay approximately US$1.00 per cubic meter of water. In comparison, US residents pay on average US $0.65 per cubic meter, although this varies widely based on location. Figure 2 provides a world comparison of price per cubic meter.

[8] This is not to suggest that the human right to water is fulfilled everywhere in Chile. In the Northern and Southern areas of the country, indigenous and environmental groups claim that water shortages resulting from groundwater extraction by mining and logging companies are violations of their right to water.

[9] In April 2007 pesos.

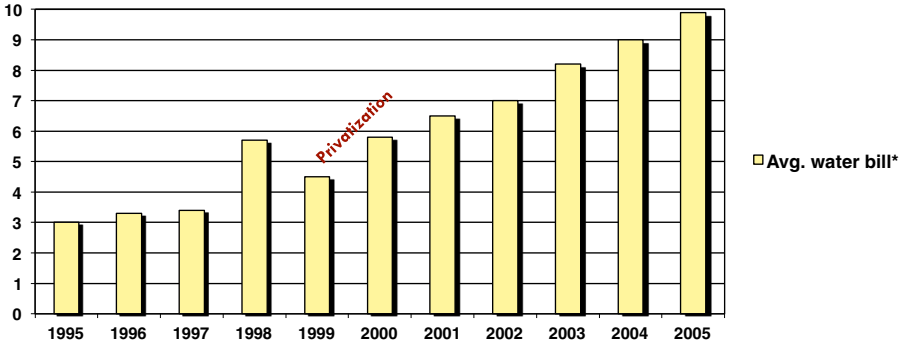

Fig. 1 Average water bill in Santiago, 1995–2005. *In thousands of Chilean pesos. (US$1=564.60 pesos). The typical bill is based on consumption of 20 m^3 of drinking water per month, and includes sanitation and treatment of wastewater charges. Values are given for December of each year. Sources: EMOS annual reports; SISS annual reports; Valenzuela and Jouravlev 2007

Although Chileans pay a high price for their water services, particularly since privatization in the late 1990s, national economic growth has increased, and there is a subsidy system that allows poor households to receive services from the provider rather than resorting to water truck vendors or dirty river sources.

Chile's water system does not meet the standards for the broader definition of the human right to water, which includes opportunities for democratic citizen participation in water management and policy decisions. In Santiago, citizen participation over tariffs for water and sanitation services is practically non-existent. This lack of participation is attributable to factors internal to the tariff setting process as well as to social factors relating to citizen participation in general in Chile.

Because water and sanitation services are a natural monopoly, there is a strong opportunity for any water company to raise tariffs to exploitative levels. Citizen

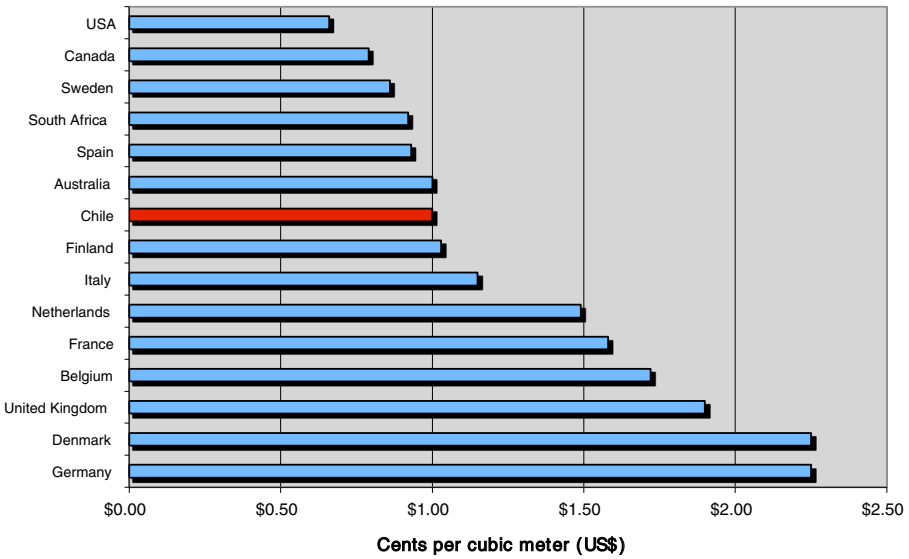

Fig. 2 World water cost comparison. Adapted from: 2005–2006 International Water Report and Cost Survey, available at: http://www.vewin.nl/SiteCollectionDocuments/Nieuws%202007/2006WaterSurvey-NUS.pdf

participation in tariff setting is one way to hold the water companies accountable for their pricing. In Chile, the tariff structure is reviewed every 5 years. The water company (Aguas Andinas in the case of Santiago) and the SISS (the government regulator) agree on a formula that will be used to determine the tariffs for water services. The SISS carries out a study of the water sector and makes a proposal for the tariff formula, and Aguas Andinas prepares its own study and proposal. The regulator and the company then review these proposals and if there are no discrepancies, they adopt the tariff structure put forward by the SISS. If there are discrepancies the SISS establishes a commission comprised of three experts: one from the SISS, one from the company, and a third expert not affiliated with either the SISS or the company. This commission helps the SISS and Aguas Andinas negotiate and reach a compromise.

There is a small window of opportunity for citizen participation on the proposed tariff formulas; however, it is extremely difficult for citizens to access and influence the process. One SISS employee explains that the process of setting tariffs begins with "preliminary bases," which create the criteria by which tariffs will be fixed for the next several years (R. R. Aguayo, author interview, November 5, 2008). By law these preliminary bases must be published and made available to the public so that members of the community can make observations about the bases (R. R. Aguayo, author interview, November 5, 2008). However, when it comes to negotiating and adopting the tariff bases, "the actual tariff process itself is secret, it's private…but anyone can say that the base is unfair or the criteria is abusive" (R. R. Aguayo, author interview, November 5, 2008). Members of the community can participate by reacting to the proposals of the SISS and the water company, but they cannot propose their own criteria. In describing this process, the SISS employee admits, "In Chile, the topic of citizen participation in not very developed – it's (water and sanitation) a very dry topic, it's very technical, very complicated. There's a book this big with technical data and formulas, etc. It's not very easy to get involved. You need experience to understand it" (R. R. Aguayo, author interview, November 5, 2008). According to the SISS employee, the opportunity to participate is there if citizens are willing and able to seek the technical information needed to understand the process.

At the end of 2008, the process of setting the tariff formula for the next 5 years was just beginning. Members of several non-governmental organizations (NGOs), including Latin American Observatory of Environmental Conflicts (OLCA), were trying to participate in the tariff process on behalf of consumers concerned about rising water prices. One organizer with OLCA explains the opportunities for citizen participation this way: "There is no citizen participation, there is no information. Ultimately it is a process of negotiation between the company and the government. And it's a very complex system…from a technical standpoint it is very complicated and very difficult for citizenry to really participate" (L. Cuenca, author interview, November 3, 2008). This account echoes the statement by the SISS employee that the information is very technical; however, the OLCA organizer describes the process as a closed process with little information made available to the public. At the time of the author interview with OLCA staff, OLCA and several other organizations were trying to participate in the tariff setting formula with little success.

While the technical aspect of the tariff process is a barrier to citizen participation, another factor preventing citizen participation is the general nature of citizenship in contemporary Chile. María Angelica Alegria of the Chilean Federal Water

Administration argues that although the Law on Tariffs allows interested people to make observations on the tariff process and the formulas, "in reality, currently there exists a social deficit regarding citizen participation" (M. A. Alegria, author interview, October 20, 2008). The average water user is not informed on all the technical aspects and the process, and the "recent political history has converted him into a passive person" (M. A. Alegria, author interview, October 20, 2008). Referring to the reforms to the water sector including privatization, Alegria claims that, "The reforms made the service into an industry, and the users became clients." She explains that Chilean water users see themselves more as clients than as citizens entitled to participate in decision-making.

One Chilean researcher and activist on water, gender, and the environment for numerous Chilean NGOs echoes this claim that Chileans tend to view themselves as clients rather than as active citizens:

> What is understood as citizen responsibility has to do basically with the making of your payments, not with the exercise of active citizenship such as being participatory, wanting to be part of the discussion, defining the orientation of the policies – this isn't what responsibility means. Being responsible means keeping up with your bills" (M. P. Aedo, author interview, October 29, 2008).

Limitations to citizen participation are rooted in the technical nature of the water sector and the closed nature of the tariff setting process, as well as by a lack of desire by users to participate in water management decisions. This lack of citizen participation reflects a broader trend of low political participation at the local level in Chile, a phenomenon attributed in part to the Concertación's ability to reinforce an already depoliticized civil society in the post-authoritarian period (Posner 2004).

Despite the lack of citizen participation in water management, Chile's water system meets the minimum criteria for access and quality of water services. While affordability is an issue, an extensive subsidy system put in place by the Chilean government ameliorates the problem of high water prices. These findings provide strong evidence that, contrary to the critics of privatization and neoliberalism, water privatization and the human right to water are not necessarily incompatible. However, the claim by privatization critics that privatized systems are undemocratic and closed to citizen participation finds supporting evidence in the Chile case.

The relative success of the privatized Chilean water sector has been attributed to the merits of a pure market approach through privatization, an approach that seeks to reduce or eliminate state interventions that distort market processes. However, a close look at the reforms to the water sector over time reveals a strong state role in the Chilean water sector before, during, and after privatization.

History of Reforms to the Chilean Water Sector

There are four primary reasons for Chile's successful water service sector: (a) the Chilean government carried out a series of gradually and internally driven reforms to the water sector beginning in the 1970s that prepared the sector for privatization (Valenzuela and Jouravlev 2007); (b) the government privatized public companies,

such as EMOS in Santiago, that were already efficient and successful; (c) the government created a regulatory framework and an effective regulator that was in place prior to privatization; and (d) the government funds a massive subsidy system to assist poor clients and to prevent service cut offs as prices rose.

Water Sector Reforms: From 1970s to Present

Chile's water services were provided by the state and financed with national funds until 1973. The Bureau of Sanitary Works (DOS) was created in 1953 by combining the Hydraulic Department and the Federal Water and Sanitation Administration, which was part of the Ministry of the Interior (SISS 2007). The DOS functioned and coordinated with several other institutions, including the public water utilities of Santiago and Valparaíso. This system was in place until the beginning of major reforms in the mid-1970s.

Pinochet initiated reforms to the water sector in the 1970s and 1980s, but chose not to privatize water utilities. This was mainly because the sector lacked the regulation and organization that was needed to ensure a smooth transition away from public ownership (Morandé and Doña 1999). Raquel Alfaro, the former General Manager of Santiago's public water company, EMOS, during the Pinochet era recalls that there was an attempt to privatize the water services at the end of the 1980s, but opposition from the water sector unions stopped the process, possibly with the support of someone inside Pinochet's military junta (Alfaro 2008: 28). The water reforms under Pinochet established the regulation and organization that was needed for the future privatization of the water and sanitation sector.

In 1977, SENDOS (the National Service of Water and Sewerage Works) was created by public law to unify the entire water services industry by combining all government activity in the water and sewerage sectors into one organization. SENDOS was an autonomous state institution with its own assets and legal standing (Morandé and Doña 1999). SENDOS consisted of regional offices in eleven of Chile's thirteen regions and two autonomous state companies that serviced the capital city of Santiago (EMOS, the Metropolitan Sanitary Works Company) and the city of Valparaíso (ESVAL, the Valparaíso Sanitary Works Company).

The creation of this new institutional framework led to increases in coverage, improvement of quality, more transparency, and reductions in staff (Valenzuela and Jouravlev 2007: 13). The goal of these reforms was to help the nation's water companies become self-financing and less dependent on state funds (Valenzuela and Jouravlev 2007; Sjodim 2006). Self-financing was achieved mainly through raising the cost of water services to consumers. Investments to improve and expand the water sector at this time were financed with public funds (Morandé and Doña 1999).

In addition to improving the efficiency of public water companies, the Pinochet government also changed the laws that governed water resources through the 1981 Water Code, a set of water laws that was designed by Chilean economists trained at the University of Chicago. The new Water Code established strong economic rights over water resources based on the idea that water is a commodity and should be managed like any other commodity. The absence of a parliament or any opposition parties during the dictatorship allowed the reforms of the 1970s and the creation of the 1981 Water

Code to take place without public debate (Bauer 2004; R. R. Aguayo, author interview, October 6, 2008).

The most significant period of changes to the water sector prior to privatization occurred between 1988 and 1990, just before Chile returned to democracy following Pinochet's loss in the 1988 plebiscite. The reforms of this period shaped the Chilean water sector and set the stage for the beginning of water privatization ten years later. Because these reforms took place prior to Patricio Aylwin (1990–1994) taking power, they advanced rapidly due to the lack of space for parliamentary or public debate (Valenzuela and Jouravlev 2007).

The reforms of 1988–1990 accomplished three inter-related goals in the water sector: they separated the state from its regulatory functions by dissolving SENDOS and creating the SISS (Superintendent of Sanitation Services), they transformed public water companies into limited companies, and they created a subsidy system for low-income consumers (Sjodim 2006; Salazar 2003; Valenzuela and Jouravlev 2007). While SENDOS was a "hands-on government agency" that combined regulation of the sector with the provision of services, the SISS was created to be an "arms-length regulator" (Shirley et al. 2000: 28). The SISS is a regulatory body attached to the Ministry of Public Works. It regulates tariffs, sets technical standards, and grants concessions for services. The creation of the SISS signaled the Chilean government's commitment to effectively regulating the sector and to preventing "consumer exploitation" as the sector moved toward privatization (Shirley et al. 2000: 29).

The reforms of 1988–1990 also aimed to make the public water companies function like private businesses. Prior to the reforms of 1988–1990, EMOS was an autonomous entity under public law. In 1990 EMOS, along with the other regional water companies, became a *sociedad anónima* (limited company), making EMOS a state-owned corporation under private commercial law (Alfaro 2008; Shirley et al. 2000; Valenzuela and Jouravlev 2007; Sjodim 2006). Following this change, EMOS began to gradually raise its tariffs in order to achieve self-financing (R. Alfaro, author interview, October 17, 2008). Legislation introduced at this time authorized the government to sell its shares in EMOS in Santiago and ESVAL in Valparaíso, the two largest urban water companies in Chile (Morandé and Doña 1999).

The reforms of 1988–1990 created a new subsidy system for the poor. Subsidies for water were previously funded through cross-subsidies[10] for smaller amounts of consumption. The reformed subsidy system created a direct subsidy paid to the water companies by the municipalities. These funds came from the federal budget and were targeted to the lowest-income categories of households. Although the reforms were aimed at reducing the direct role of the state in the water sector, the subsidy systems represented a new and important role for the state in the water sector. The state began identifying those who could not pay their water bills and using public funds to pay portions of their bills directly to the water companies.

Many of the 1988–1990 reforms mimicked the design of a concession with a private company, except they were carried out under public ownership (Shirley et al. 2000: 5). Reforms such as turning the water companies into limited companies and establishing an independent regulator are typically implemented in the transition from public to

[10] Cross-subsidies take the revenue earned in excess of costs from some consumers and use it to subsidize the costs for those who cannot afford to pay for the service.

private services. In Chile, public water businesses were made to function according to the same principles and conditions that govern the private sector, such as self-financing, well before privatization (Valenzuela and Jouravlev 2007). Within a few years, coverage of water urban areas reached almost 100 % and sanitation reached 97 % (See Fig. 3). By the end of the 1990s, the public water companies were "efficient, sustainable and profitable and gave good services to the population" (Valenzuela and Jouravlev 2007: 21).

Sixteen years of military government ended when the Concertación government, an alliance of anti-Pinochet political parties, took office in 1990. The new center-left government led by President Aylwin promised to maintain a mildly reformed version of the 1980 Chilean Constitution written by Pinochet's government, and to continue implementing the neoliberal economic model. Before the election, however, Aylwin said that state enterprises providing basic services ought to remain public, and there was even talk from his party of reversing privatization contracts that Pinochet had implemented (Shirley et al. 2000: 22). According to a leader from FENASTRAOS, the water sector union within EMOS, at the time of the return to democracy Aylwin sent a letter to the company with a commitment not to privatize EMOS (J. Gonzalez B., author interview, October 29, 2008). Despite Aylwin's campaign promises to protect public services, the administration deepened neoliberal reforms and moved forward with the privatization of remaining state-owned enterprises.

In the early 1990s, the water companies were still public businesses, meaning the assets were still in the hands of the state although they were managed like private companies. While prices rose, the subsidy system mitigated the potential adverse reaction by customers. President Eduardo Frei Ruiz-Tagle (1994–2000) announced in his 1995 annual message that the water sector would be privatized (Valenzuela and Jouravlev 2007). Several additional reforms to the sector occurred in the mid-late 1990s

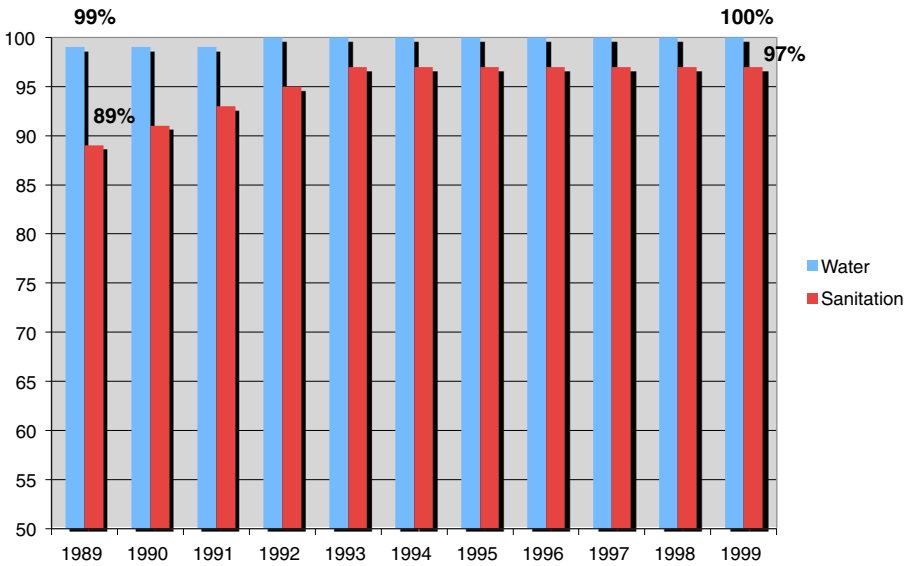

Fig. 3 Percentage of population served by EMOS 1989–1999. Sources: EMOS 1990; 1991; 1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999; Alfaro 2008

to further prepare the sector for privatization. For example, Law 19,549 was passed in 1998 to prevent excessive profits of private companies.[11]

The main reason given for privatizing water companies in Chile was the need for large investment to expand the treatment of wastewater, estimated at approximately US$ 2.2 billion (Morandé and Doña 1999). The government claimed that the state-owned water companies did not have sufficient earnings to meet the investment needs required for developing wastewater treatment plants (Morandé and Doña 1999; Shirley et al. 2000). However, Alfaro recalls that EMOS had a plan for meeting the wastewater treatment needs, but the state did not want to invest in it and opted instead for privatization (R. Alfaro, author interview, October 17, 2008). While information to the public was limited, there was "a very strong governmental campaign saying that the state does not have the money it needs for the projects that we need, mainly the wastewater treatment, and so it is good that the private sector take this over" (M. P. Aedo, author interview, October 29, 2008). Alternatives to privatization that would have allowed the sector to remain public were not pursued for political reasons (M. A. Alegria, author interview, October 20, 2008). An employee of the DGA (Federal Water Administration) describes the decision to privatize as "a political decision within the pro-market context" (H. Peña, author interview, October 14, 2008).

The state began selling its shares in the largest water companies in 1999 beginning with EMOS in Santiago. In 1999, 51 % of EMOS shares was sold to *Sociedad Inversiones Aguas Metropolitana*, a consortium composed of Suez Lyonnaise des Eaux of France and Aguas de Barcelona of Spain. CORFO, the Chilean Economic Development Agency, retained 35 % of the shares (Aguas Andinas 2007). In 2001 the company changed its name from EMOS to Aguas Andinas.

Over a decade of reforms preceded the first sale of assets of public water companies.[12] Unlike in neighboring countries such as Bolivia, where water privatization was rapid, privatization of water services in Chile was a gradual process (Jouravlev 2007). By the time the Chilean government sold the public water companies, the state-run companies were highly efficient and provided excellent water services.

EMOS—Santiago's Public Water Company

Santiago's water system, operated now by Aguas Andinas, is praised as one of the best in the region with close to 100 % coverage for water and sanitation and high quality drinking water. Santiago is one of the few Latin American cities where one can safely drink water straight from the tap. Although this might serve as evidence of the merits of water privatization, it is important to note that prior to privatization Chile's public water company, EMOS was regarded as one of the best public utilities in Latin America (Yepes 1990; Lobina and Hall 2007; Bitrán and Valenzuela 2003).

EMOS became a highly efficient company as a result of the government's reforms to the water sector in 1988–1990 described above. These reforms included the Law of Tariffs of the Sanitation Sector, which introduced a process for determining tariffs that sets rates according to what a "model company" would theoretically charge given the

[11] See Trevett and Franceys 2008 for details on this law.

[12] For analyses of the good performance of the Chilean water sector, see Valenzuela and Jouravlev 2007, Alfaro 2008, Yepes 1990, Shirley et al. 2000, and Sjodim 2006.

projected demand over the following 5 years. The philosophy of this model was to avoid transferring the inefficiencies of the company to the users through unjustly high tariffs (Alfaro 2008: 27–28).

After EMOS became incorporated as a limited company, it was required to provide ongoing detailed information about its operations to the government, which carefully monitored the company's operations. EMOS paid its net earnings as dividends to the government. As a result of the improved efficiency and the increase in tariffs, EMOS was the first Chilean water company to achieve self-financing. By 1995, the year when the decision to privatize water services was made by the government, urban coverage for potable water had reached 98 %, and 89 % for sewerage (EMOS 1996).

EMOS became an excellent company under pressure from the Chilean government to operate like a private business. The general manager of EMOS during the 1990s, Raquel Alfaro, describes EMOS during the 1990s this way: "We were the same, *the same*, as a private company. The difference was that I didn't have to give an accounting to my owners in Spain or Britain, I gave it to the people and to the government" (R. Alfaro, author interview, October 17, 2008). Her comment highlights a key difference between the public company EMOS and a private water company; the public company was financially accountable to the government instead of to foreign stockholders.

In addition to the high quality of services, EMOS was considered to be an excellent company by its workers, its customers, and outside evaluators (Shirley et al. 2000; Sjodim 2006). Alfaro describes EMOS as a company where workers took pride in their work and in the company. EMOS had a strong tradition of professionalism and honesty, and there was "a climate of stability and calm" within the EMOS workforce prior to privatization (R. Alfaro, author interview, October 17, 2008).

EMOS also benefited from capable and experienced leadership in the period prior to privatization. When Raquel Alfaro was named General Manager of EMOS in the early 1990s, the administration style of the company changed. Alfaro describes her administration style as "not hierarchical but…a team, where we all worked for customer satisfaction" (Alfaro 2008: 32). Although the salaries were not particularly high and the jobs in the sector carried a large amount of responsibility, Alfaro claims that a "public service calling" and a feeling that they were working toward "the good" motivated people to continue working in the company (Alfaro 2008: 33). She also points out that there were many women in the leadership of the company, and there was a special motivation for women working in the water sector to provide a safe and efficient service that benefited the community, especially children (Alfaro 2008: 34). During these pre-privatization years, Alfaro claims that the gains in efficiency achieved by EMOS were passed on to the users in the form of affordable tariffs. Under Alfaro's leadership, the company "chose the best people, paid good salaries, respected contracts, taught plumbing to women [and] neighbors, [carried out] information campaigns, and connected people that couldn't pay" (R. Alfaro, author interview, October 17, 2008).

Several outside studies of the public water utility's performance corroborate these claims by Alfaro. A 1990 World Bank study comparing public water sectors in Latin America and Europe found that EMOS had one of the best coverage rates of all the companies surveyed and was closer in quality to the European companies in the study than to those of its neighbors in Latin America (Yepes 1990). These findings were published almost 10 years prior to the privatization of EMOS. Another World Bank study determined that EMOS was a well-managed, efficient company (World Bank

1992 cited in Shirley et al. 2000:12). The high performance of the company was attributed to efficient management (Shirley et al. 2000), a high level of professionalism, lack of corruption, a focus on providing services to the poor, and the creation of programs to educate consumers on saving water and basic plumbing (Sjodim 2006: 27).

Alfaro remembers that during the period 1990–1996, "the threat of 'the privatization' and of massive firings that it could generate was not present in EMOS…" (Alfaro 2008: 41). On the contrary, there was a strong sense of labor stability within EMOS, a new collective contract with the unions had granted an increase in pay, and the company was running efficiently. When word of the impending privatization spread, the majority of workers opposed it and immediately demanded severance packages should the privatization occur (R. Alfaro, author interview, October 17, 2008). In terms of the public's knowledge of the privatization plans, Alfaro recalls that the transition to privatization was so smooth that the population was not even aware that the utility had been privatized. Customers of the water company did not experience a sudden shift in quality or prices following privatization, as the private company took over managing an already efficient water service.

When the Suez consortium bought a controlling interest in EMOS in 1999, they bought an efficient company with extremely high service coverage and quality. In contrast, many Latin American cities have crumbling, insufficient public services that do not reach large portions of the population. For example, when the water system in Cochabamba, Bolivia was privatized in 1999, a contract that was cancelled after only a few months, the system had very low coverage rates, and it was in need of massive investments and organizational restructuring. In order to make these large investments and still make a profit, private companies typically choose to raise prices considerably. This was not necessary in Chile, as the state had already invested in creating an extensive water and sanitation infrastructure, and prices had already gone up gradually over time to levels that allowed for self-financing.

While Aguas Andinas did not have to invest heavily in expanding the existing network, a problem that Suez faced in its contracts with public water companies in Bolivia and Argentina, the company was obligated to invest in the expansion of wastewater treatment. After privatization, Aguas Andinas brought investments to the wastewater treatment sector in Santiago, and treatment of wastewater increased from 7 % in 1999 to 82.3 % in 2007 (SISS 2007; Lobina and Hall 2007: 34).

The Chilean state sold a well-functioning system that had been carefully created, monitored, and funded by the state for decades prior to privatization. There was "limited need, if any at all, for organizational restructuring," and a strong regulatory framework set up by the government had been in place for years (Lobina and Hall 2007: 34). The existence of an experienced regulator is often absent in controversial water concessions.

Regulation

Regulation of water and sanitation services is particularly important given that the water services sector is almost always a monopoly. The role of the regulator is to regulate the coverage, quality, costs, and tariffs in a way that the consumer is in the same position as if there were a choice of water service carriers. In this way the

regulator acts as a counterbalance to the extreme power that any water company holds over its captive customers. Chile's water regulatory system is considered a model of best practices for the region (Lentini 2011). This reputation is based on its independence and neutrality (Shirley et al. 2000), its strength vis-à-vis the companies it regulates, and the method used to determine tariffs.

The regulatory framework for the water services sector is particularly strong in Chile in part because it was established by law and is backed by constitutional safeguards (Shirley et al. 2000), unlike in other countries where regulation is usually determined by contract (Jouravlev 2008; Lentini 2011). In many Latin American cities, the regulatory frameworks are often under-developed or absent at privatization. For example, the regulator was created simultaneously with the privatization of water in Buenos Aires, Argentina, a contract that was later cancelled (A. Jouravlev, author interview, October 8, 2008).

The SISS is a neutral and independent regulatory agency that sets tariffs for water services, grants concessions for water and sanitation services, monitors the quality of water and sanitation services, and monitors compliance with environmental norms about industrial wastewater in Chile. Prior to 1990, there were no explicit regulations for water services in Chile (Morandé and Doña 1999). The Chilean government created the SISS in 1990 and strengthened the regulatory system before beginning the process of water sector privatization (Lentini 2011; Valenzuela and Jouravlev 2007).

Laws issued between 1988 and 1990, and later refined in the 1990s, clearly set the parameters for setting rates, granting concessions, and subsidizing services for low-income households. The regulatory framework was initially designed to attract private investors and provide incentives for efficiently expanding the water services system (Shirley et al. 2000: 7). The SISS was meant to be an independent entity with no management role in water services, and to focus only on tariff setting and monitoring compliance with investment plans and quality standards (Shirley et al. 2000: 29; Alegría and Celedón 2006; Morandé and Doña 1999). Legislation in 1998 strengthened the regulatory framework by giving the SISS more resources, autonomy, and responsibility as well as better instruments for financial oversight of water companies. Specifically, the legislation strengthened the system for sanctioning water companies for noncompliance with their obligations (Valenzuela and Jouravlev 2007: 23).

The SISS sets goals for expansion of coverage, and in the event of noncompliance Chilean law allows the SISS to sanction the private provider (Morandé and Doña 1999: 170). For example, water companies are obligated to provide their development plans, including plans for investment, for SISS approval. Failure to do so could bring fines or contract cancellation (Valenzuela and Jouravlev 2007: 30).

The SISS acts as an intermediary between the water companies and Chilean citizens, which sometimes involves penalizing the private companies. For example, Aguas Andinas invested $315 million in the La Farfana wastewater treatment plant outside Santiago, which is one of the largest and most modern treatment plants in the world. People living next to the La Farfana plant complained of leakage and foul odors emanating from the plant. When the SISS investigated these claims by citizens, they found that faulty aspects of the treatment process were causing the odor and leakage. The regulator fined Aguas Andinas and suspended the wastewater treatment charge in

customers' bills until the company resolved the situation (Valenzuala and Jouravlev 2007: 49).[13] This was an instance where the regulator investigated and acted on behalf of citizens in a conflict between the company and its customers.

The process of determining water and sanitation tariffs used in Chile requires a strong regulatory entity (Bitrán and Arellano 2005). Tariffs are calculated every 5 years using a "model company" as a benchmark to set appropriate rates. A factitious model company is created that would theoretically meet demand over the following 5 year period while operating at the highest level of efficiency. The model company approach is based on international standards for water service provision and takes into account the local conditions faced by the real companies that provide water services in the area. The estimated tariffs from the model company include the need to meet new investment requirements, operation and maintenance costs, and a minimum annual return on assets of at least seven percent (Shirley et al. 2000: 32). The tariff calculated is adjusted based on projected long run costs and revenues over the next 5 years and indexed to a price index (Shirley et al. 2000). The estimated tariff for the model company is then used as a benchmark for the actual tariff structure for the next 5 years.

This approach to tariff setting requires water companies operating in Chile to provide accurate accounting information on their operating costs and services to the SISS (Jouravlev 2004). An effective accounting system is a requirement for regulation of companies and a tool that mitigates the problem of information asymmetry between the regulator and the companies in its jurisdiction (Jouravlev 2004: 48). The ability of the SISS to demand accurate regulatory accounting from the private water companies is evidence of the strength of the regulatory agency. In 2002, the SISS introduced new instructions for water companies regarding the provision of detailed, specific, and standardized information about income and costs of services. In response to the new instructions, Aguas Andinas filed a complaint questioning the SISS's authority to require the company to essentially introduce a parallel accounting system to their existing system. The first Chamber of the Santiago Court of Appeals backed the SISS and unanimously rejected the case by Aguas Andinas. The case "established a precedent regarding the authority of the SISS to demand information on the accounting of costs and income of regulated activities" (Jouravlev 2004: 48). The power of the SISS vis-à-vis the companies it regulates is backed by the Chilean judiciary, contributing to a strong regulatory environment in the water sector.

The SISS is currently working to further improve regulatory accounting and access to internal information of regulated water companies with the goal of increasing oversight of the private water companies (Lentini 2011). The SISS is also focused on making improvements in efficiency of service and transferring these gains to users through lower tariffs (Lentini 2011: 27).

While the SISS is considered to be a neutral and independent regulatory agency, the Chilean government does maintain a level of influence over the regulatory agency. The creation of the SISS was meant to place policymakers one step away from the utility companies, with the regulating agency functioning in the middle ground between the government and the water company. In theory, this should prevent the problems of

[13] Environmental groups continue to criticize the La Farfana plant as poorly designed and negatively impacting the environment (see http://www.olca.cl/oca/chile/regionmp/farfana05.htm).

clientelism that can occur in public systems where the government is both the provider of the service and the regulator (Foster 2005). However, this framework does not eliminate the influence of the Chilean government on the water sector. Policymakers provide guidance by establishing the long-term strategy for the water and sanitation sector (Foster 2005). The SISS is under the supervision of the President of Chile through the Ministry of Public Works, and the President appoints the Supertintendent. While some regulators are financially autonomous, the SISS is funded by a general tax (Foster 2005).

Through its creation of and support for the SISS, the Chilean government plays an ongoing role in monitoring the water sector under private ownership and protecting citizens from abuse or exploitation by the private water companies. The government also protects the interests of citizens by funding a large subsidy system to prevent service cut offs for customers who cannot afford their water bills.

Subsidies

Chile has one of the best water and sanitation sectors in the developing world, however many Chileans cannot afford this service. In order to prevent cut offs to poor customers who cannot pay their bills, the Chilean government funds a subsidy program to protect its poorest citizens. Chile spends approximately $46 million/year on subsidies to help pay the water bills for approximately 680,000 households, about 17.4 % of the total clients (SISS 2007). This has allowed the water companies under both public and private ownership to raise the water tariffs to levels that allowed for self-financing in the public system and profit making in the private system.

There was a cross-subsidy system in place prior to privatization. After 1989, customers were not charged for the first 10 cubic meters of water per month they consumed. New legislation in the 1990s eliminated this system and created a demand subsidy, which focused solely on the poorest households (Alfaro 2008: 44). In the metropolitan region, the new subsidy resulted in a 40 % reduction in the bills for the first 15 cubic meters of monthly consumption for qualified customers (Alfaro 2008). The subsidy was applied as a discount on utility bills, and the municipality paid the company the discounted amount. The central government makes the funds available to the municipalities for this program.

EMOS worked closely and actively with the municipalities to make this subsidy available to customers (Alfaro 2008: 44). The state essentially "assumes the cost of the reduction in price to the users for a social benefit, because universal service is a priority for the government" (Alfaro 2008: 71). This subsidy system that targets the poor specifically is "a more equitable contribution on the part of the state than a universally subsidized tariff, since the aid arrives actually where it is most required" (Valenzuela and Jouravlev 2007: 51). The government has modified the subsidy system several times since the early 1990s to improve its efficiency and to loosen the conditions to qualify for the subsidy.

The subsidy system is financed by the central government and is paid directly to the private companies, such as Aguas Andinas in Santiago. Eligibility is based on national surveys of household income, the subsidy can last for up to 3 years, and it is renewable if necessary (SISS 2007). The Ministry of Interior and the Ministry of Planning (MIDEPLAN) manages the subsidy program. MIDEPLAN gathers household

survey information and determines the amount of subsidies needed by customers (Trevett and Franceys 2008). This can amount to between 15 % and 85 % of the customer's bill.

In addition to helping low-income households pay for water and sanitation services, the subsidy system plays an important political role in Chile. The average price of water and sanitation services tripled between 1989 and 2002, however the subsidies softened the blow of these rising rates for low-income consumers. In 2004 a new subsidy system called "Chile support" was created. Under this program the state pays 100 % of the water bill for a minimum amount of water for the poorest families (SISS 2007).

Given that rate hikes are one of the principal reasons for public protest and subsequent cancellation of water contracts in other Latin American cities, this large, expensive safety net provided by the Chilean state is a significant factor in the survival and success of water privatization in Chile. As one Chilean pro-privatization engineer explains: "Look at what we have done in Chile. People have water – poor people – and they have a better standard of life. It wasn't anything revolutionary; the state helps those who can't pay" (J. A. Yarad, author interview, October 30, 2008). Others criticize the government subsidy as a method of allowing private companies to make profits from an unaffordable service. One water activist says, "For me the most ridiculous thing is that instead of investigating the company and fining them, what the government does is subsidize it. So basically the company charges the tariff it wants…and the government pays the bill" (M. P. Aedo, author interview, October 29, 2008).

Conclusion

This article examined the reforms to Chile's water sector leading up to and since privatization in 1999, and it analyzed the water service sector from a human rights perspective. Chile is fulfilling the human right to water in terms of access and quality, and while the cost of water is high, subsidies are in place to assist the lowest income households with their water bills. The human right to water also calls for citizen participation in decision-making, particularly about water rates. This standard is not met in Chile under the private system due to the closed nature of negotiations over rates between the government and the private companies, and also in part due to low levels of civil society mobilization around such issues.

Privatization has posed a challenge for protecting access to quality services for the poor in other social service sectors such as health and education (Kaufman and Nelson 2004), and in monopoly sectors that lack adequate regulatory oversight and public accountability (Birch and Haar 2000; Manzetti 1999; Teichman 2001). Chile presents a rare success story, with close to universal access in urban areas under a fully privatized water sector. Given the high profile failures of water privatization in neighboring countries like Bolivia and Argentina, it is important to understand the root causes of the Chilean success story and the implications of the Chile case.

The Chilean government sold efficient public companies, such as EMOS in Santiago, that were built with public investment, the government established a strong regulatory framework prior to privatization, and the government heavily subsidizes the water bills to allow the private companies to charge a price that is high enough to maintain the system and make a profit. I argue that the strong state capacity to govern the water sector in the public interest by embedding reforms in state interventions

explains the relative success of the Chilean water sector and the fulfillment of the minimum criteria for the human right to water.

This level of state capacity to guide the water sector in Chile is uncommon in Latin America and in the developing world, which suggests that while the human right to water can be fulfilled in a privatized water sector, it is a rare set of circumstances that make this possible. Most countries considering privatization have weak public water companies and weak state capacity to implement the kinds of policies that Chile implemented. Aging infrastructure, lack of new investment, and corruption have taken a toll on these utilities, and the supporters of neoliberal reforms are quick to blame state mismanagement for this situation. Public investment in water services declined in part due to the demands of the structural adjustment programs prescribed by the international financial institutions beginning in the 1980s. These cuts to government spending have contributed to the deterioration of public services, making privatization seem like the only option. This is where the true lessons of the water services sector in Chile are most instructive. Rather than viewing Chile as a model of privatization success, Chile can offer a model for building a strong public water sector and for embedding reforms to the sector in state interventions.

These findings challenge both sides of the global debate over water privatization. The poster child for successful water privatization is actually a case of strong state involvement, and contrary to the argument made by critics of privatization, the human right to water can potentially be fulfilled in a private system if the state has the capacity to govern the water sector in the public interest. Despite several high-profile failures of water privatization contracts in Latin America and elsewhere, international lending institutions continue to push for private sector participation in the water sectors of developing countries through public–private partnerships. Without the necessary interventions by the state, this policy path will not lead to improvements to the water sectors of these countries. Each side of the global debate on water privatization remains committed to its position, yet both agendas are dependent on states to follow through to ensure that improvements to water and sanitation sectors reach the millions of people struggling to survive without adequate access to these essential services.

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